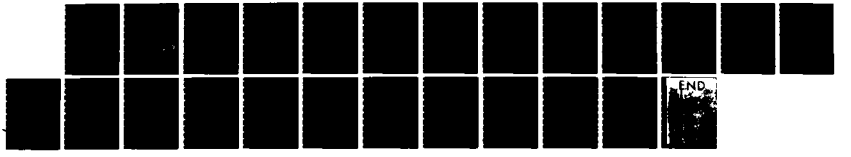
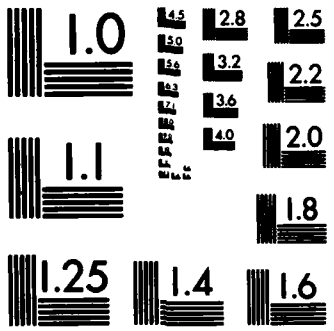
AD-A136 686 19319A MLRS MISSILE NUMBERS 339 341 344 348 355 356 1/1
ROUND NUMBERS 540/DL-.. (U) ARMY ELECTRONICS RESEARCH
AND DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER
UNCLASSIFIED NOV 83 ERADCOM/ASL-DR-1330 F/G 4/2 NL





METEOROLOGICAL DATA REPORT
19319A MLRS
Missile Number 339, 341, 344, 348, 355, 356
Round Number 540/DL-55 thru 545/DL-60
29 November 1983

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

DISPOSITION INSTRUCTIONS

Destroy this report when it is no longer needed. Do not return to the originator.

DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

The citation of trade names and names of manufacturers in this report is not to be construed as official Government indorsement or approval of commercial products or services referenced herein.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR-1330	2. GOVT ACCESSION NO. AD-A136686	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19319A MLRS Missile Number 339, 341, 344, 348, 355, 356 Round Number 540/DL-55 thru 545/DL-60		5. TYPE OF REPORT & PERIOD COVERED 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE 29 November 1983 13. NUMBER OF PAGES 22
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

This document has been approved for public release and sale; its distribution is unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

Approved for public release; distribution unlimited.

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19319A MLRS, Missile Number 339, 341, 344, 348, 355, 356, Round Number 540/DL-55 thru 545/DL-60 are presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS PAGE

A-1

INTRODUCTION

19319A MLRS, Missile Numbers 339, 341, 344, 348, 355, and 356, Round Numbers 540/DL-55 thru 545/DL-60, were launched form LC-33, White Sands Missile Range (WSMR), New Mexico, at 1604:33, 1604:37, 1604:42, 1604:46, 1604:51, and 1604:55 MST, 29 November 1983. The scheduled launch times were 1600 MST with a 4.5 second separation.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

   a. Surface

   (1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

   (2) Anemometer data were provided from existing tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

   b. Upper Air

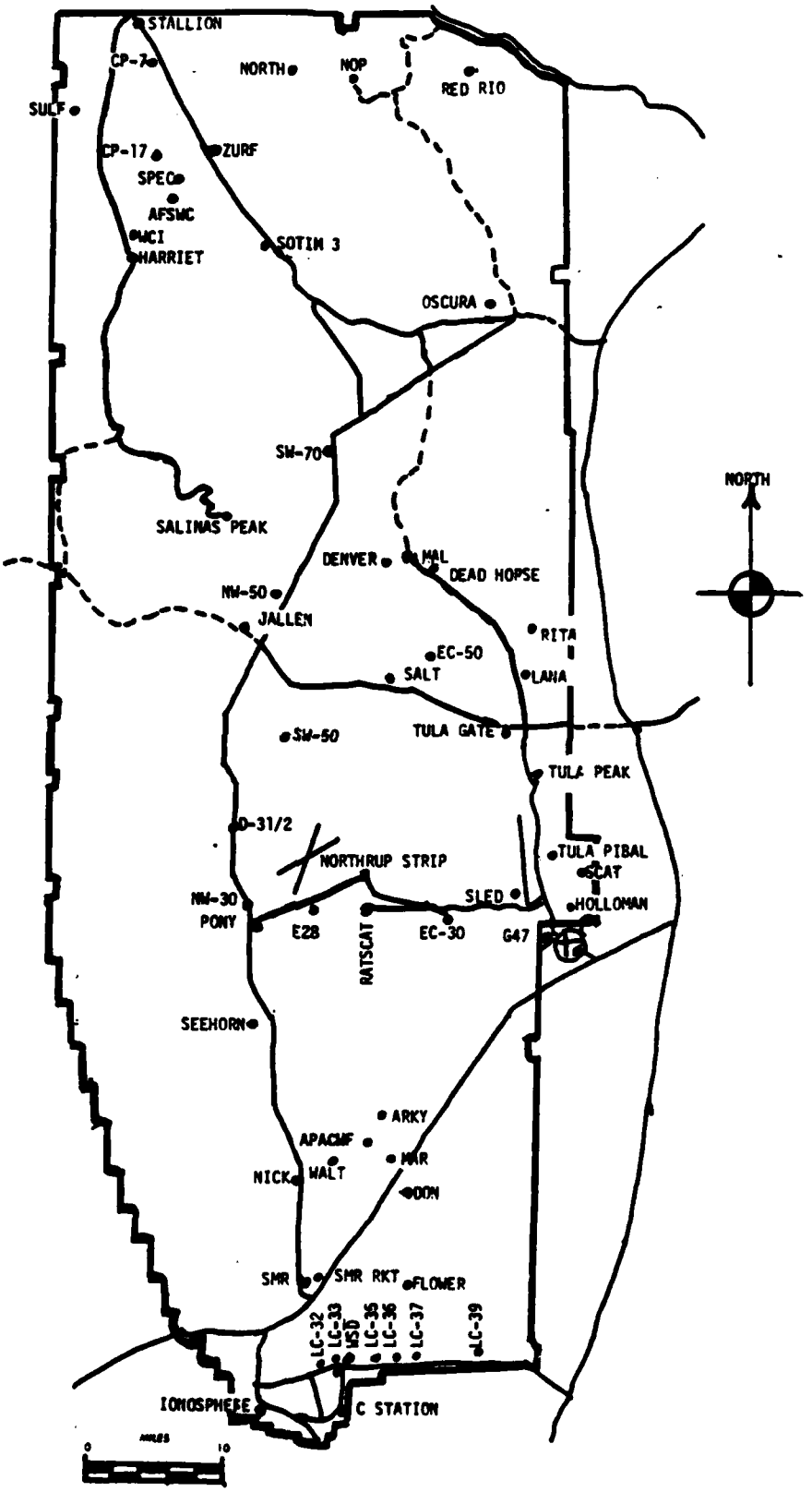
   (1) Low level wind data were obtained from pilot-balloon observations at:

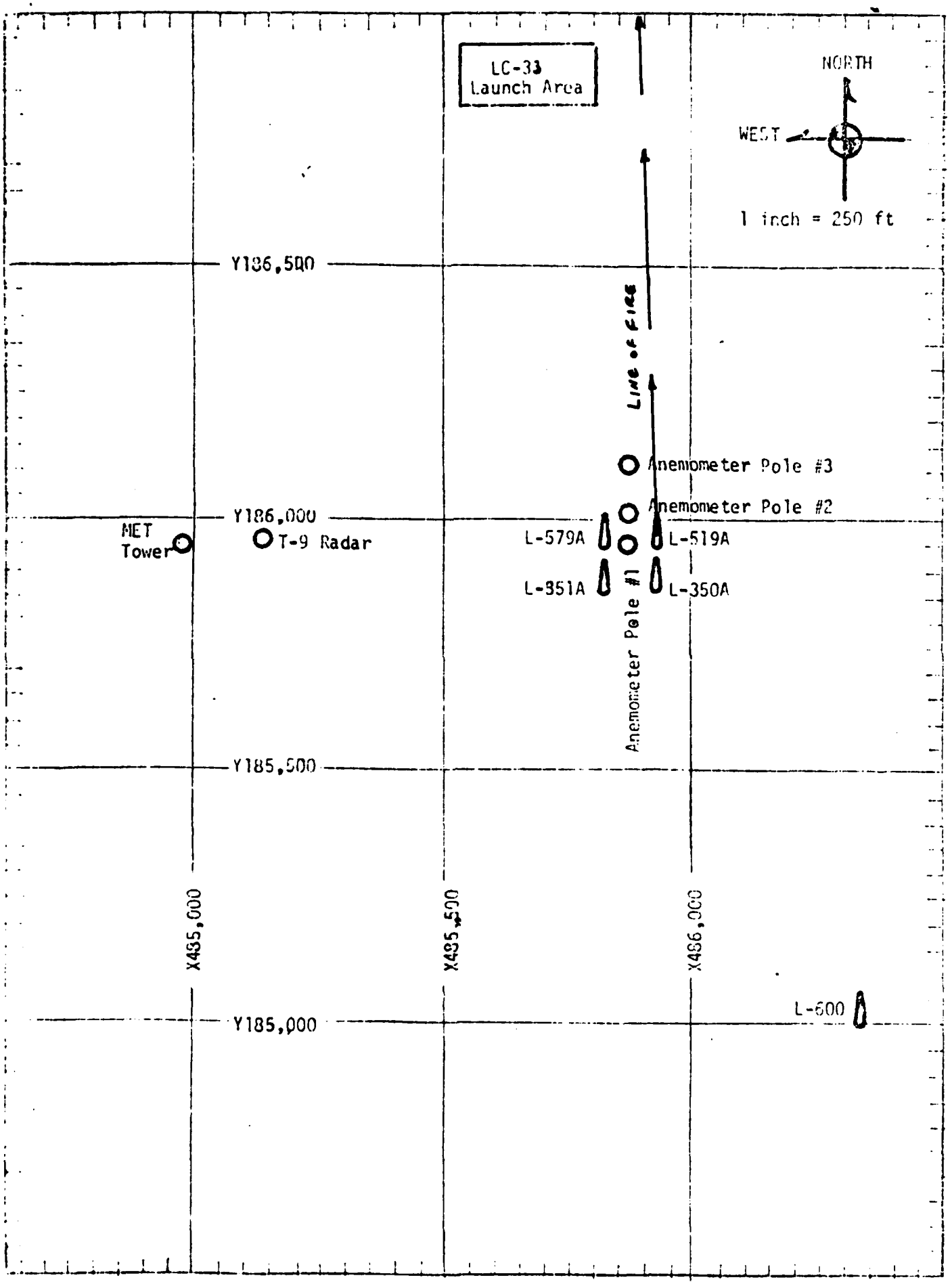
SITE AND ALTITUDE	
LC-33	2 Km
Don	2 Km

   (2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME	
WSD	1415 MST
LC-37	1415 MST
WSD	1606 MST

WSMR METEOROLOGICAL SITES




LC-33
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
Line of Fire
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1

STATION LC-33

DATE 29 (DAY) 11 (MONTH) 83 (YEAR)

X= 484,982.73 Y= 185,957.73 H= 3995.00

TIME MST	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1606	874.2		14.2		-4.9	26		300	12		20

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS

PSYCHROMETRIC COMPUTATION

TIME: MST	1606		
DRY BULB TEMP.	14.2		
WET BULB TEMP.	5.6		
WET BULB DEPR.	8.6		
DEW POINT	-4.9		
RELATIVE HUMID.	26		

LC-33 METEOROLOGICAL TOWER
ANEMOMETER MEASURED WIND DATA

TABLE 2

WSTM COOORDINATES X=484,982.64 Y=185,957.73 H=3983.00(BASE)

DATE 29 Nov 83 1603 M S T
DAY MONTH YEAR TIME

LEVEL #1		12 FT AGL
T-TIME(SEC)	DIR(DEG)	SPEED(KTS)
T-30	291	12
T-20	285	16
T-10	284	14
T- 0(1st T)	282	12
T+10	273	10
T+20	273	11
T+30	276	15
T+40	273	16
T+50	271	16
T+60	274	14

LEVEL #2		62 FT AGL
T-TIME(SEC)	DIR(DEG)	SPEED(KTS)
T-30	285	19
T-20	291	16
T-10	282	19
T- 0(1st T)	291	17
T+10	279	18
T+20	278	20
T+30	275	20
T+40	290	20
T+50	279	20
T+60	275	20

LEVEL #3		102 FT AGL
T-TIME(SEC)	DIR(DEG)	SPEED(KTS)
T-30	285	20
T-20	283	20
T-10	281	21
T- 0(1st T)	276	16
T+10	259	19
T+20	273	23
T+30	270	20
T+40	274	22
T+50	270	23
T+60	276	21

LEVEL #4		202 FT AGL
T-TIME(SEC)	DIR(DEG)	SPEED(KTS)
T-30	284	20
T-20	276	20
T-10	276	20
T- 0(1st T)	275	22
T+10	275	20
T+20	270	22
T+30	276	23
T+40	273	22
T+50	274	23
T+60	276	20

TABLE 3

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 29 November 1983

SITE: LC-33
TIME: 1606 MST
WSTM COORDINATES:
X= 486,872.00
Y= 184,146.75
H= 3,981.15

SITE: DON
TIME 1604 MST
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	282	12
150	272	18
210	270	24
270	259	23
330	254	21
390	246	17
500	240	19
650	238	15
800	235	13
950	231	11
1150	215	11
1350	236	18
1550	248	18
1750	263	27
2000	261	29

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	220	11
150	253	17
210	250	22
270	246	28
330	254	22
390	255	22
500	256	19
650	265	20
800	264	16
950	271	14
1150	279	06
1350	233	05
1550	300	02
1750	298	04
2000	292	11

All data obtained from a RAPTS T-9 radar tracked pilot-balloon observations.

AIMING AND T-TIME COMPUTER MET MESSAGE DATA
29 November 1983

WSD 1415 MST		LC-37 1445 MST		WSD 1606 MST	
METCM1324064		METCM1324063		METCM1324064	
292130122874		292180124871		292310122874	
00480018	28990874	00444017	28950871	00462014	28740874
01507017	28780863	01497019	28720861	01501023	28670864
02499012	28500838	02481018	28460836	02456017	28480838
03444007	28130798	03476014	28100796	03427008	28190799
04464010	27760751	04454009	27650749	04471015	27840752
05510026	27690706	05526027	27500704	05502027	27600707
06540026	27480664	06526030	27370662	06500028	27300664
07512037	27160624	07512040	27080621	07514035	27060624
08510041	26850586	08511047	26790583	08507044	26840586
09499044	26540550	09504048	26510547	09507048	26520549
10497055	26230515	10498058	26200513	10496049	26120515
11492050	25870483	11497055	25840480	11499049	25740482
12487050	25240437	12490051	25240435	12491050	25130436

STATION ALTITUDE 3989.00 FEET MSL
29 NOV. 83 1415 HRS MST
ASCENSION NO. 596

SIGNIFICANT LEVEL DATA
3330020596
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 5

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
876.5	3989.0	15.7	-7.2	20.0
869.3	4218.2	14.9	-7.2	21.0
850.0	4838.6	12.5	-9.2	21.0
767.5	7610.3	4.9	-13.4	25.0
727.4	9043.0	3.2	-17.6	20.0
700.0	10066.2	3.9	-18.2	18.0
500.0	18782.0	-12.4	-33.0	16.0
446.1	21608.9	-19.5	-34.9	24.0
400.0	24240.3	-26.2	-40.7	24.0

STATION ALTITUDE 3989.00 FEET MSL
29 NOV. 83 1415 HRS MST
ASCENSION NO. 596

UPPER AIR DATA
3330020596
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 6

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	870.5	15.7	-7.2	20.0	1055.5	662.6	270.0	18.1	1.000251
4000.0	870.2	15.7	-7.2	20.0	1055.2	662.6			1.000251
4500.0	860.5	13.8	-8.1	21.0	1043.1	660.4			1.000248
5000.0	845.8	12.1	-9.4	21.2	1030.7	658.4			1.000244
5500.0	829.5	10.7	-10.2	22.0	1016.8	656.8			1.000240
6000.0	814.4	9.3	-10.9	22.7	1003.2	655.2			1.000236
6500.0	799.5	7.9	-11.7	23.4	989.7	653.5			1.000232
7000.0	784.9	6.6	-12.5	24.1	976.5	651.9			1.000229
7500.0	770.6	5.2	-13.3	24.8	963.4	650.3	253.6	7.4	1.000225
8000.0	756.4	4.4	-14.5	23.6	948.3	649.4	258.7	8.6	1.000221
8500.0	742.3	3.8	-15.9	21.9	932.8	648.7	269.6	13.3	1.000216
9000.0	728.6	3.3	-17.4	20.1	917.5	647.9	276.7	20.1	1.000212
9500.0	715.3	3.5	-17.8	19.1	899.6	648.2	284.3	25.4	1.000208
10000.0	701.7	3.9	-18.2	18.1	881.8	648.6	290.3	27.3	1.000204
10500.0	688.4	3.1	-18.9	17.9	867.5	647.7	296.6	27.2	1.000200
11000.0	675.2	2.2	-19.8	17.8	853.8	646.6	299.5	27.8	1.000197
11500.0	662.3	1.2	-20.6	17.7	840.4	645.5	301.3	28.7	1.000193
12000.0	649.6	.3	-21.5	17.6	827.1	644.4	296.6	31.3	1.000190
12500.0	637.2	-.7	-22.3	17.4	814.1	643.3	292.7	34.1	1.000187
13000.0	625.0	-1.6	-23.2	17.3	801.4	642.2	290.2	36.5	1.000183
13500.0	613.1	-2.5	-24.0	17.2	788.8	641.1	288.2	38.9	1.000180
14000.0	601.4	-3.5	-24.9	17.1	776.4	639.9	287.4	40.9	1.000177
14500.0	589.9	-4.4	-25.7	17.0	764.2	638.8	287.1	42.6	1.000174
15000.0	578.6	-5.3	-26.6	16.9	752.3	637.7	286.5	43.8	1.000171
15500.0	567.5	-6.3	-27.4	16.8	740.5	636.6	285.4	44.1	1.000168
16000.0	556.7	-7.2	-28.2	16.6	728.9	635.5	284.1	44.3	1.000166
16500.0	546.0	-8.1	-29.1	16.5	717.5	634.3	282.1	44.6	1.000163
17000.0	535.6	-9.1	-29.9	16.4	706.3	633.2	280.2	44.9	1.000160
17500.0	525.4	-10.0	-30.8	16.3	695.3	632.1	278.9	45.8	1.000157
18000.0	515.3	-10.9	-31.6	16.2	684.4	630.9	278.1	46.5	1.000155
18500.0	505.5	-11.9	-32.5	16.1	673.8	629.8	277.9	47.5	1.000152
19000.0	495.6	-12.9	-33.0	16.6	663.4	628.5	277.7	51.3	1.000150
19500.0	485.7	-14.2	-33.2	18.0	653.3	627.0	277.3	51.3	1.000148
20000.0	476.0	-15.5	-33.5	19.4	643.3	625.5	276.5	49.9	1.000145
20500.0	466.5	-16.7	-33.9	20.9	633.6	623.9	275.5	48.6	1.000143
21000.0	457.2	-18.0	-34.3	22.3	624.0	622.4	274.9	49.6	1.000141
21500.0	448.1	-19.2	-34.7	23.7	614.6	620.9	274.3	50.2	1.000139
22000.0	438.9	-20.5	-35.7	24.0	605.1	619.3	273.9	50.9	1.000136
22500.0	429.9	-21.8	-36.8	24.0	595.7	617.7	273.6	51.7	1.000134
23000.0	421.1	-23.0	-37.9	24.0	586.4	616.2	273.6	51.7	1.000132

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
29 NOV. 83 1415 HRS MST
ASCENSION NO. 596

UPPER AIR DATA
3330020596
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 6 (cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	412.5	-24.3	-39.0	24.0	577.3	614.6			1.000130
24000.0	404.0	-25.6	-40.1	24.0	568.4	613.0			1.000128

STATION ALTITUDE 5989.00 FEET MSL
29 NOV. 83 1415 HRS MST
ASCENSION NO. 596

MANDATORY LEVELS
3330020596
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 7

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4835.	12.5	-9.2	21.	9999.0	9999.0XX
800.0	6488.	8.0	-11.6	23.	9999.0	9999.0XX
750.0	8220.	4.2	-15.2	23.	262.0	9.6
700.0	10056.	3.9	-18.2	18.	291.0	27.3
650.0	12018.	.3	-21.5	18.	296.4	31.5
600.0	14108.	-3.6	-25.0	17.	287.3	41.3
550.0	16345.	-7.8	-28.8	17.	282.6	44.5
500.0	18756.	-12.4	-33.0	16.	277.8	49.6
450.0	21363.	-19.0	-34.6	23.	274.5	50.1
400.0	24200.	-26.2	-40.7	24.		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4051.37 FEET MSL
29 NOV. 65 1445 HRS MST
ASCENSION NO. 175

SIGNIFICANT LEVEL DATA
3330180175
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 8

PRESSURE MILLIBARS	GEOPOTENTIAL ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
871.1	4051.4	15.8	-7.7	19.0
862.0	4342.4	13.3	-10.5	18.0
850.0	4728.5	12.4	-9.9	20.0
750.3	7786.3	4.0	-13.3	27.0
733.7	8695.0	1.6	-14.5	29.0
725.8	8984.5	1.8	-18.2	21.0
719.9	9200.4	1.2	-18.7	21.0
700.0	9942.3	2.1	-19.1	19.0
691.5	10266.0	1.9	-21.2	16.0
663.1	11374.3	.6	-21.6	17.0
572.8	15185.4	-6.3	-28.6	15.0
529.9	17174.1	-9.6	-31.3	15.0
500.0	18640.4	-12.6	-33.8	15.0
400.0	24103.3	-25.6	-40.1	24.0

STATION ALTITUDE 4051.37 FEET , SL
29 NOV. 83 1445 HRS MST
ASCENSION NO. 175

UPPER AIR DATA
3330180175
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	871.1	15.8	-7.7	19.0	1048.7	662.7	250.0	17.1	1.000249
4500.0	857.1	12.9	-10.2	18.8	1042.4	659.3	254.0	16.5	1.000245
5000.0	841.5	11.7	-10.1	20.6	1028.0	657.9	258.8	16.0	1.000242
5500.0	826.1	10.3	-10.6	21.8	1014.2	656.3	263.9	15.5	1.000239
6000.0	811.0	8.9	-11.1	22.9	1000.5	654.7	269.3	15.2	1.000235
6500.0	796.2	7.5	-11.7	24.1	987.0	653.1	266.9	13.9	1.000232
7000.0	781.7	6.2	-12.3	25.2	973.8	651.5	263.6	12.5	1.000229
7500.0	767.4	4.8	-12.9	26.3	960.7	649.8	260.6	10.8	1.000225
8000.0	753.2	3.4	-13.5	27.5	947.7	648.3	257.1	9.0	1.000222
8500.0	739.2	2.1	-14.2	28.6	934.5	646.7	277.6	12.5	1.000218
9000.0	725.4	1.8	-18.2	21.0	918.5	646.2	288.5	17.4	1.000212
9500.0	711.8	1.6	-18.8	20.2	902.0	645.9	293.2	23.9	1.000208
10000.0	698.5	2.1	-19.4	18.5	883.5	646.5	295.5	28.0	1.000203
10500.0	685.4	1.6	-21.3	16.2	868.4	646.0	296.9	28.0	1.000199
11000.0	672.6	1.0	-21.5	16.7	854.0	645.3	297.2	29.3	1.000196
11500.0	659.9	.4	-21.8	16.9	840.0	644.5	295.4	31.8	1.000192
12000.0	647.4	-.5	-22.7	16.7	826.8	643.4	292.5	35.2	1.000189
12500.0	635.0	-1.4	-23.7	16.4	813.8	642.3	290.2	37.9	1.000186
13000.0	623.0	-2.3	-24.6	16.1	801.0	641.3	288.2	40.3	1.000183
13500.0	611.1	-3.2	-25.5	15.9	788.4	640.2	287.8	42.6	1.000180
14000.0	599.5	-4.2	-26.4	15.6	776.0	639.1	287.7	45.0	1.000177
14500.0	588.1	-5.1	-27.3	15.4	763.9	638.0	287.6	46.2	1.000174
15000.0	576.9	-6.0	-28.3	15.1	751.9	636.9	287.2	47.1	1.000171
15500.0	565.8	-6.8	-29.0	15.0	739.8	635.9	285.8	46.7	1.000168
16000.0	554.8	-7.7	-29.7	15.0	727.7	634.9	284.4	46.9	1.000165
16500.0	544.1	-8.5	-30.4	15.0	715.9	633.9	283.0	47.7	1.000162
17000.0	533.5	-9.3	-31.1	15.0	704.2	632.9	281.7	49.6	1.000159
17500.0	523.1	-10.3	-31.9	15.0	693.0	631.7	280.6	50.8	1.000157
18000.0	512.8	-11.3	-32.7	15.0	682.1	630.5	279.7	51.3	1.000154
18500.0	502.8	-12.3	-33.5	15.0	671.3	629.3	279.3	51.3	1.000152
19000.0	492.7	-13.5	-34.1	15.6	660.8	627.9	278.9	51.3	1.000149
19500.0	482.7	-14.6	-34.6	16.4	650.4	626.4	278.8	52.0	1.000147
20000.0	473.0	-15.8	-35.0	17.2	640.2	625.0	278.5	52.4	1.000144
20500.0	463.4	-17.0	-35.6	18.1	630.2	623.6	278.0	52.5	1.000142
21000.0	454.1	-18.2	-36.1	18.9	620.3	622.1	277.2	52.7	1.000140
21500.0	444.9	-19.4	-36.7	19.7	610.6	620.6	276.4	53.0	1.000138
22000.0	435.9	-20.6	-37.3	20.5	601.1	619.2	275.6	53.9	1.000135
22500.0	427.1	-21.8	-38.0	21.4	591.8	617.7	274.8	55.4	1.000133
23000.0	418.4	-23.0	-38.6	22.2	582.6	616.3			1.000131
23500.0	410.0	-24.2	-39.3	23.0	573.5	614.8			1.000129

UPPER AIR DATA

STATION ALTITUDE 4051.37 FT MSL
29 NOV. 83 1445 HRS MST
ASCENSION NO. 175

3330180175
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 9 (cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	401.7	-35.4	-40.0	23.8	564.6	613.3			1.000127

STATION ALTITUDE 4051.37 FEET MSL
29 NOV. 83 1445 HRS MST
ASCENSION NO. 175

MANDATORY LEVELS
3330180175
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 10

PRESSURE	GEOPOTENTIAL	TEMPERATURE AIR	TEMPERATURE DEWPOINT	REL. HUM.	WIND DATA DIRECTION	WIND DATA SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.	4725.	12.4	-9.9	20.	256.2	16.3
800.0	6378.	7.9	-11.5	24.	267.6	14.2
750.0	8108.	3.1	-13.7	28.	261.7	9.5
700.0	9933.	2.1	-19.1	19.	295.3	28.0
650.0	11887.	-.3	-22.5	17.	293.1	34.5
600.0	13972.	-4.1	-26.4	16.	287.7	44.9
550.0	16205.	-8.0	-30.0	15.	283.8	47.2
500.0	18615.	-12.6	-33.8	15.	279.1	51.2
450.0	21222.	-18.7	-36.4	19.	276.8	52.8
400.0	24064.	-25.6	-40.1	24.		

STATION ALTITUDE 3989.00 FEET MSL
29 NOV. 83 1606 HRS MST
ASCENSION NO. 597

SIGNIFICANT LEVEL DATA
33300205971
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 11

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
874.0	3989.0	13.3	-5.3	27.0
862.0	4370.4	13.1	-8.1	22.0
850.0	4756.2	12.1	-10.1	20.0
749.4	8171.6	4.7	-17.6	18.0
700.0	9986.7	2.4	-20.8	16.0
666.5	11283.6	-.3	-22.3	17.0
576.7	15326.5	-5.8	-28.9	14.0
500.0	18675.7	-13.8	-32.9	18.0
403.0	24111.7	-26.9	-42.1	22.0

STATION ALTITUDE 3989.00 FEET MSL
29 NOV. 83 1606 HRS MST
ASCENSION NO. 397

UPPER AIR DATA
3330020597
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 12

GEOMETRIC ALTITUDE NSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	874.0	13.3	-5.3	27.0	1061.0	659.9	260.0	14.0	1.000255
4000.0	873.7	13.3	-5.4	26.9	1060.6	659.9	259.9	14.0	1.000255
4500.0	858.0	12.8	-8.8	21.3	1043.9	659.2	257.3	13.3	1.000247
5000.0	842.4	11.6	-10.7	19.9	1029.4	657.8	254.4	12.7	1.000242
5500.0	827.0	10.5	-11.8	19.6	1014.6	656.5	251.2	12.1	1.000238
6000.0	811.9	9.4	-12.8	19.3	999.9	655.2	247.7	11.5	1.000234
6500.0	797.1	8.3	-13.9	19.0	985.5	653.9	249.6	10.4	1.000229
7000.0	782.5	7.2	-15.0	18.7	971.3	652.6	253.2	9.1	1.000226
7500.0	768.2	6.2	-16.1	18.4	957.3	651.4	260.5	11.9	1.000222
8000.0	754.2	5.1	-17.2	18.1	943.5	650.1	265.0	15.2	1.000218
8500.0	740.2	4.3	-18.1	17.6	928.8	649.1	270.4	18.4	1.000214
9000.0	726.5	3.1	-19.0	17.1	913.6	648.4	275.2	21.5	1.000210
9500.0	713.0	3.0	-19.9	16.5	898.7	647.6	278.5	24.1	1.000206
10000.0	699.7	2.4	-20.8	16.0	884.1	646.9	281.0	25.5	1.000203
10500.0	686.6	1.3	-21.4	16.4	870.9	645.6	282.5	26.8	1.000200
11000.0	673.7	.3	-22.0	16.8	857.8	644.4	281.9	28.3	1.000196
11500.0	661.0	-.6	-22.7	16.8	844.4	643.3	281.8	29.8	1.000193
12000.0	648.4	-1.3	-23.5	16.5	830.4	642.5	284.3	31.5	1.000190
12500.0	636.1	-2.0	-24.3	16.1	816.6	641.7	286.5	33.2	1.000186
13000.0	623.9	-2.6	-25.1	15.7	803.1	640.9	288.0	34.8	1.000183
13500.0	612.1	-3.3	-25.9	15.4	789.9	640.1	289.4	36.5	1.000180
14000.0	600.4	-4.0	-26.8	15.0	776.8	639.3	287.5	40.9	1.000177
14500.0	589.0	-4.7	-27.6	14.6	764.0	638.5	286.0	45.4	1.000173
15000.0	577.8	-5.4	-28.4	14.2	751.3	637.6	285.2	45.7	1.000170
15500.0	566.7	-6.2	-29.1	14.2	739.3	636.8	284.6	45.8	1.000168
16000.0	555.8	-7.4	-29.7	14.8	728.1	636.2	284.8	44.6	1.000165
16500.0	544.8	-8.6	-30.2	15.4	717.2	635.7	284.5	44.3	1.000162
17000.0	534.1	-9.8	-30.8	16.0	706.4	635.3	282.9	46.3	1.000160
17500.0	523.7	-11.0	-31.4	16.6	695.7	634.9	281.3	47.0	1.000157
18000.0	513.5	-12.2	-32.0	17.2	685.3	634.4	279.6	46.4	1.000155
18500.0	503.5	-13.4	-32.7	17.8	675.0	634.0	279.2	46.7	1.000153
19000.0	493.4	-14.6	-33.4	18.2	664.6	633.5	279.3	47.5	1.000150
19500.0	483.4	-15.8	-34.2	18.6	654.1	633.1	279.1	48.1	1.000148
20000.0	473.5	-17.0	-35.1	19.0	643.8	632.6	278.9	50.1	1.000145
20500.0	463.9	-18.2	-35.9	19.3	633.8	632.1	278.6	53.9	1.000143
21000.0	454.5	-19.4	-36.7	19.7	623.8	631.6	278.1	52.9	1.000140
21500.0	445.3	-20.6	-37.6	20.1	614.1	631.2	277.5	50.6	1.000138
22000.0	436.2	-21.8	-38.4	20.4	604.5	630.7	276.6	45.8	1.000136
22500.0	427.4	-23.0	-39.3	20.8	595.1	630.2	275.7	45.2	1.000134
23000.0	418.7	-24.2	-40.1	21.2	585.8	629.7	275.0	47.7	1.000132

STATION ALTITUDE 3989.00 FT MSL
29 NOV. 83 1606 HRS MST
ASCENSION NO. 597

UPPER AIR DATA
333002059/
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 12 (cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	410.2	-25.4	-41.0	21.5	576.7	613.2			1.000129
24000.0	401.8	-26.6	-41.9	21.9	567.8	611.7			1.000127

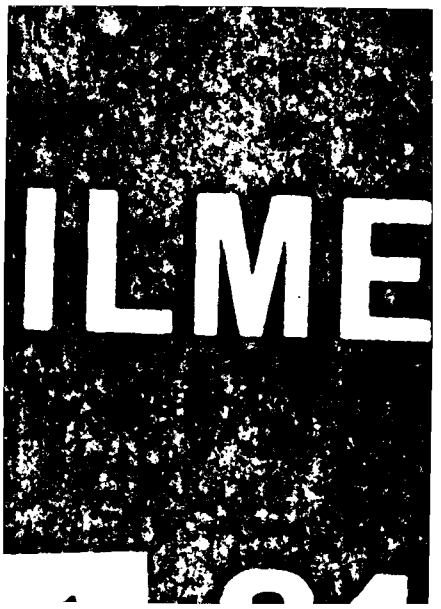
STATION ALTITUDE 5989.00 FEET MSL
29 NOV. 83 1600 HRS MST
ASCENSION NO. 597

MANDATORY LEVELS
333020597
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

Table 13

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.0	4753.	12.1	-10.1	20.	255.9	13.0
800.0	6406.	8.5	-13.7	19.	249.1	10.6
750.0	8143.	4.7	-17.5	18.	265.9	16.2
700.0	9979.	2.4	-20.8	16.	280.9	25.4
650.0	11929.	-1.2	-23.4	17.	284.0	31.2
600.0	14011.	-4.0	-26.8	15.	287.5	41.1
550.0	16247.	-8.0	-30.0	15.	285.0	43.9
500.0	18650.	-13.8	-32.9	18.	279.2	47.0
450.0	21245.	-20.0	-37.1	20.	277.9	52.0
400.0	24072.	-26.9	-42.1	22.		


ILME